

WHAT IS CLAIMED IS:

1. An MPEG video decoder comprising:

an image decoding section which decodes parameters of each layer and a picture based on an MPEG bit stream;

5 a frame memory having a plurality of banks, wherein each of said bank stores one picture and the parameters of each layer decoded by said image decoding section by mutually relating the picture and the parameters;

a decode control section which controls said image  
10 decoding section; and

a display control section which carries out a display control of a picture to be displayed, based on the parameters of each layer related to said picture stored in said frame memory.

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2. The MPEG video decoder according to claim 1, further comprising:

a status register which displays a state of storing pictures of the plurality of banks,

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wherein said decode control section updates said status register when the decoding of one picture has been completed, and said display control section updates said status register when the display of one picture has been completed.

25 3. The MPEG video decoder according to claim 1, wherein

said image decoding section has an internal buffer that temporarily stores a decoded picture in a macro-block unit.

4. The MPEG video decoder according to claim 3, wherein  
5 said internal buffer also works as a buffer for temporarily storing the decoded parameters of each layer.

5. The MPEG video decoder according to claim 4, wherein  
a data transfer path for transferring a decoded picture from  
10 said internal buffer to said frame memory also works as a data transfer path for transferring the decoded parameters of each layer between said internal buffer and said frame memory.

15 6. The MPEG video decoder according to claim 1, wherein said image decoding section decodes the parameters of a picture to be decoded, and updates parameters of each layer related to a picture that has been decoded immediately before by writing the decoded parameters into these parameters,  
20 thereby to generate the parameters of each layer relating to the picture to be decoded.

7. The MPEG video decoder according to claim 1, wherein  
said decode control section operates asynchronously with a  
25 vertical synchronization signal, and said display control

section operates in synchronism with the vertical synchronization signal.

8. The MPEG video decoder according to claim 2, wherein  
5 if the displayed picture is a reference picture of other picture, then said display control section does not update said status register after the completion of the display of that picture.

10 9. An MPEG video decoding method comprising the steps of:  
reading parameters of each layer relating to a picture that has been decoded immediately before;

decoding parameters corresponding to a picture to be  
decoded, and updating the parameters of each layer that have  
15 been read at the first stage by using the decoded parameters;

storing the parameters obtained at the parameter  
decoding step into a frame memory;

decoding said picture; and

storing the decoded picture into said frame memory,  
20 by relating the decoded picture to the parameters of each layer corresponding to the decoded picture.

*Sub B17*  
10. The MPEG video decoding method according to claim 11,  
wherein when decoding a first picture, in the parameter  
25 reading step, parameters are read from a memory area that

is to store the parameters of each layer attached to the picture  
to be decoded.